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\*\*\* YOU HAVE NEW MAIL \*\*\*

=> s polycationic (3a) multichromophore?  
L1 11 POLYCATIONIC (3A) MULTICHROMOPHORE?

=> s l1 and peptide nucleic acid?  
L2 8 L1 AND PEPTIDE NUCLEIC ACID?

=> dup rem l2  
PROCESSING COMPLETED FOR L2  
L3 8 DUP REM L2 (0 DUPLICATES REMOVED)

=> d l3 bib abs 1-8

L3 ANSWER 1 OF 8 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2006:681478 CAPLUS  
DN 145:138599  
TI Cationic conjugated polymers suitable for strand-specific polynucleotide  
detection in homogeneous and solid state assays  
IN Bazan, Guillermo C.; Liu, Bin  
PA The Regents of the University of California, USA  
SO PCT Int. Appl., 71 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2006074471	A2	20060713	WO 2006-US882	20060110
	W:				
	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,				
	CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,				
	GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR,				
	KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX,				
	MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE,				
	SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC,				
	VN, YU, ZA, ZM, ZW				
	RW:				
	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,				
	IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ,				
	CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH,				
	GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,				
	KG, KZ, MD, RU, TJ, TM				

US 2006183140            A1     20060817     US 2006-329495            20060110  
PRAI US 2005-642901P       P     20050110

AB The invention further relates to polycationic multichromophores, which may be conjugated polymers, and methods, articles and compns. employing them as described herein. In some aspects, the invention relates to methods, articles and compns. for the detection and anal. of biomols. in a sample. Provided assays include those determining the presence of a target biomol. in a sample or its relative amount, or the assays may be quant. or semi-quant. The methods can be performed on a substrate. The methods can be performed in an array format on a substrate, which can be a sensor. In some embodiments, detection assays are provided employing sensor biomols. that do not comprise a fluorophore that can exchange energy with the cationic multichromophore. In some aspects biol. assays are provided in which energy is transferred between one or more of the multichromophore, a label on the target biomol., a label on the sensor biomol., and/or a fluorescent dye specific for a polynucleotide, in all permutations. The multichromophore may interact at least in part electrostatically with the sensor and/or the target, and an increase in energy transfer with the polymer may occur upon binding of the sensor and the target. Other variations of the inventions are described further herein. Thus, poly[9,9'-bis((6''-N,N,N-trimethylammonium)hexyl)fluorene-co-alt-4,7-(2,1,3-benzothiadiazole)dibromide] (PFBT) in phosphate buffer containing 5% 1-methyl-2-pyrrolidinone was combined with Cy5-labeled PNA and its complementary target DNA. Excitation at 460 nm resulted in intense red emission from Cy5. There was no energy transfer for the solution containing

only the Cy5-labeled PNA and target DNA. To prepare PFBT, 2,7-bis[9,9'-bis(6''-bromohexyl)fluorenyl]-4,4,5,5-tetramethyl-[1,3,2]dioxaborolane was first synthesized from 9,9'-bis(bromohexyl)-2,7-dibromofluorene and 2-isopropoxy-4,4,5,5-tetramethyl-[1,3,2]-dioxaborolane. Suzuki copolymer of 2,7-bis[9,9'-bis(6''-bromohexyl)fluorenyl]-4,4,5,5-tetramethyl-[1,3,2]dioxaborolane and 4,7-dibromo-2,1,3-benzothiazole produced the PFBT precursor. The polymer PFBT was prepared from the precursor polymer, poly[9,9'-bis((6''-bromohexyl)fluorene)-co-alt-4,7-(2,1,3-benzothiadiazole)], by reaction with Me3N.

L3 ANSWER 2 OF 8 USPTAFULL on STN  
AN 2006:254283 USPTAFULL  
TI Methods and articles for strand-specific polynucleotide detection with cationic multichromophores  
IN Bazan, Guillermo C., Santa Barbara, CA, UNITED STATES  
Liu, Bin, Singapore, SINGAPORE  
PA The Regents of the University of California, Oakland, CA, UNITED STATES (U.S. corporation)  
PI US 2006216734            A1     20060928  
AI US 2006-329861            A1     20060110 (11)  
PRAI US 2005-642883P         20050110 (60)  
DT Utility  
FS APPLICATION  
LREP FITCH EVEN TABIN AND FLANNERY, 120 SOUTH LA SALLE STREET, SUITE 1600, CHICAGO, IL, 60603-3406, US  
CLMN Number of Claims: 48  
ECL Exemplary Claim: 1  
DRWN 12 Drawing Page(s)  
LN.CNT 2161

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention further relates to polycationic multichromophores, which may be conjugated polymers, and methods, articles and compositions employing them as described herein. In some aspects, the invention relates to methods, articles and compositions for the detection and analysis of biomolecules in a sample. Provided assays include those determining the presence of a target biomolecule in a sample or its relative amount, or the assays may be

quantitative or semi-quantitative. The methods can be performed on a substrate. The methods can be performed in an array format on a substrate, which can be a sensor. In some embodiments, detection assays are provided employing sensor biomolecules that do not comprise a fluorophore that can exchange energy with the cationic multichromophore. In some aspects biological assays are provided in which energy is transferred between one or more of the multichromophore, a label on the target biomolecule, a label on the sensor biomolecule, and/or a fluorescent dye specific for a polynucleotide, in all permutations. The multichromophore may interact at least in part electrostatically with the sensor and/or the target, and an increase in energy transfer with the polymer may occur upon binding of the sensor and the target. Other variations of the inventions are described further herein.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 3 OF 8 USPATFULL on STN  
AN 2006:240539 USPATFULL  
TI Methods and compositions for aggregant detection  
IN Bazan, Guillermo C., Santa Barbara, CA, UNITED STATES  
Liu, Bin, Singapore, SINGAPORE  
PA The Regents of University of California, Oakland, CA, UNITED STATES  
(U.S. corporation)  
PI US 2006204984 A1 20060914  
AI US 2006-344942 A1 20060131 (11)  
PRAI US 2005-649024P 20050131 (60)  
DT Utility  
FS APPLICATION  
LREP FITCH EVEN TABIN AND FLANNERY, 120 SOUTH LA SALLE STREET, SUITE 1600,  
CHICAGO, IL, 60603-3406, US  
CLMN Number of Claims: 28  
ECL Exemplary Claim: 1  
DRWN 9 Drawing Page(s)  
LN.CNT 2187

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB This invention relates to an aggregation sensor useful for the detection and analysis of aggregants in a sample, and methods, articles and compositions relating to such a sensor. The sensor comprises first and second optically active units, where energy may be transferred from an excited state of the first optically active unit to the second optically active unit. The second optically active unit is present in a lesser amount, but its relative concentration is increased upon aggregation, increasing its absorption of energy from the first optically active units. This increase in energy transfer can be detected in variety of formats to produce an aggregation sensing system for various aggregants, including for quantitation. Other variations of the inventions are described further herein.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 4 OF 8 USPATFULL on STN  
AN 2006:214985 USPATFULL  
TI Cationic conjugated polymers suitable for strand-specific polynucleotide detection in homogeneous and solid state assays  
IN Bazan, Guillermo C., Santa Barbara, CA, UNITED STATES  
Liu, Bin, Singapore, SINGAPORE  
PA The Regents of the University of California, Oakland, CA, UNITED STATES  
(U.S. corporation)  
PI US 2006183140 A1 20060817  
AI US 2006-329495 A1 20060110 (11)  
PRAI US 2005-642901P 20050110 (60)  
DT Utility  
FS APPLICATION  
LREP FITCH EVEN TABIN AND FLANNERY, 120 SOUTH LA SALLE STREET, SUITE 1600,

CHICAGO, IL, 60603-3406, US

CLMN Number of Claims: 63

ECL Exemplary Claim: 1

DRWN 12 Drawing Page(s)

LN.CNT 2181

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention further relates to polycationic multichromophores, which may be conjugated polymers, and methods, articles and compositions employing them as described herein. In some aspects, the invention relates to methods, articles and compositions for the detection and analysis of biomolecules in a sample. Provided assays include those determining the presence of a target biomolecule in a sample or its relative amount, or the assays may be quantitative or semi-quantitative. The methods can be performed on a substrate. The methods can be performed in an array format on a substrate, which can be a sensor. In some embodiments, detection assays are provided employing sensor biomolecules that do not comprise a fluorophore that can exchange energy with the cationic multichromophore. In some aspects biological assays are provided in which energy is transferred between one or more of the multichromophore, a label on the target biomolecule, a label on the sensor biomolecule, and/or a fluorescent dye specific for a polynucleotide, in all permutations. The multichromophore may interact at least in part electrostatically with the sensor and/or the target, and an increase in energy transfer with the polymer may occur upon binding of the sensor and the target. Other variations of the inventions are described further herein.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 5 OF 8 USPATFULL on STN

AN 2005:4283 USPATFULL

TI Methods and compositions for detection and analysis of polynucleotide-binding protein interactions using light harvesting multichromophores

IN Bazan, Guillermo C., Santa Barbara, CA, UNITED STATES

Wang, Shu, Goleta, CA, UNITED STATES

Liu, Bin, Goleta, CA, UNITED STATES

PA The Regents of the University of California (U.S. corporation)

PI US 2005003386 A1 20050106

AI US 2004-779412 A1 20040213 (10)

PRAI US 2003-447860P 20030213 (60)

DT Utility

FS APPLICATION

LREP Bingham McCutchen LLP, Suite 1800, Three Embarcadero Center, San Francisco, CA, 94111-4067

CLMN Number of Claims: 30

ECL Exemplary Claim: 1

DRWN 9 Drawing Page(s)

LN.CNT 1330

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Methods, compositions and articles of manufacture for assaying a sample for a target polynucleotide are provided. A sample suspected of containing the target polynucleotide is contacted with a polycationic multichromophore and a sensor PBP that can bind to the target polynucleotide. The sensor PBP comprises a signaling chromophore to absorb energy from the excited multichromophore and emit light in the presence of the target polynucleotide. The methods can be used in multiplex form. Kits comprising reagents for performing such methods are also provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 6 OF 8 USPATFULL on STN

AN 2004:280256 USPATFULL

TI Methods and compositions for detection and analysis of polynucleotides  
using light harvesting multichromophores  
IN Bazan, Guillermo C., Santa Barbara, CA, UNITED STATES  
Gaylord, Brent S., Santa Barbara, CA, UNITED STATES  
PA The Regents of the University of California, Oakland, CA, UNITED STATES  
(U.S. corporation)  
PI US 2004219556 A1 20041104  
AI US 2003-600286 A1 20030620 (10)  
PRAI US 2002-406266P 20020826 (60)  
DT Utility  
FS APPLICATION  
LREP David W. Maher, Bingham McCutchen LLP, 28th Floor, Three Embarcadero  
Center, San Francisco, CA, 94111  
CLMN Number of Claims: 30  
ECL Exemplary Claim: 1  
DRWN 4 Drawing Page(s)  
LN.CNT 1178

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Methods, compositions and articles of manufacture for assaying a sample  
for a target polynucleotide are provided. A sample suspected of  
containing the target polynucleotide is contacted with a  
polycationic multichromophore and a sensor PNA  
complementary to the target polynucleotide. The sensor PNA comprises a  
signaling chromophore to absorb energy from the excited multichromophore  
and emit light in the presence of the target polynucleotide. The methods  
can be used in multiplex form. Kits comprising reagents for performing  
such methods are also provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 7 OF 8 USPATFULL on STN  
AN 2004:184461 USPATFULL  
TI Methods and compositions for detection and analysis of polynucleotides  
using light harvesting multichromophores  
IN Bazan, Guillermo C., Santa Barbara, CA, UNITED STATES  
Gaylord, Brent S., Santa Barbara, CA, UNITED STATES  
Wang, Shu, Goleta, CA, UNITED STATES  
PA The Regents of the University of California, Oakland, CA, UNITED STATES  
(U.S. corporation)  
PI US 2004142344 A1 20040722  
AI US 2003-648945 A1 20030826 (10)  
PRAI US 2002-406266P 20020826 (60)  
DT Utility  
FS APPLICATION  
LREP BINGHAM, MCCUTCHEN LLP, THREE EMBARCADERO, SUITE 1800, SAN FRANCISCO,  
CA, 94111-4067  
CLMN Number of Claims: 55  
ECL Exemplary Claim: 1  
DRWN 5 Drawing Page(s)  
LN.CNT 1305

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Methods, compositions and articles of manufacture for assaying a sample  
for a target polynucleotide are provided. A sample suspected of  
containing the target polynucleotide is contacted with a  
polycationic multichromophore and a sensor  
polynucleotide complementary to the target polynucleotide. The sensor  
polynucleotide comprises a signaling chromophore to receive energy from  
the excited multichromophore and increase emission in the presence of  
the target polynucleotide. The methods can be used in multiplex form.  
Kits comprising reagents for performing such methods are also provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 8 OF 8 WPIDS COPYRIGHT 2006 THE THOMSON CORP on STN

AN 2004-142830 [14] WPIDS  
 CR 2004-784599  
 DNC C2004-057433 [14]  
 DNN N2004-113890 [14]  
 TI Assay method, by contacting sample e.g. blood, urine with sensor peptide nucleic acid which has signaling chromophore to absorb energy from excited multichromophore and emit light in presence of target polynucleotide  
 DC A89; B04; D16; S03  
 IN BAZAN G C; GAYLORD B S; WANG S  
 PA (REGC-C) UNIV CALIFORNIA  
 CYC 103  
 PIA WO 2004001379 A2 20031231 (200414)\* EN 34[4]  
 AU 2003243722 A1 20040106 (200447) EN  
 US 20040142344 A1 20040722 (200449) EN  
 US 20040219556 A1 20041104 (200473) EN  
 KR 2005010956 A 20050128 (200535) KO  
 EP 1534857 A2 20050601 (200536) EN  
 JP 2005530182 W 20051006 (200566) JA 28  
 CN 1675377 A 20050928 (200610) ZH  
 ZA 2005000529 A 20051228 (200612) EN 43  
 CN 1694967 A 20051109 (200618) ZH  
 ADT WO 2004001379 A2 WO 2003-US19678 20030620; US 20040142344 A1 Provisional US 2002-406266P 20020826; US 20040219556 A1 Provisional US 2002-406266P 20020826; AU 2003243722 A1 AU 2003-243722 20030620; CN 1675377 A CN 2003-819836 20030620; EP 1534857 A2 EP 2003-761235 20030620; US 20040219556 A1 US 2003-600286 20030620; EP 1534857 A2 WO 2003-US19678 20030620; JP 2005530182 W WO 2003-US19678 20030620; US 20040142344 A1 US 2003-648945 20030826; JP 2005530182 W JP 2004-516105 20030620; KR 2005010956 A KR 2004-720729 20041220; ZA 2005000529 A ZA 2005-529 20050119; CN 1694967 A CN 2003-824651 20030826  
 FDT AU 2003243722 A1 Based on WO 2004001379 A; EP 1534857 A2 Based on WO 2004001379 A; JP 2005530182 W Based on WO 2004001379 A  
 PRAI US 2002-406266P 20020826  
 US 2002-390524P 20020620  
 US 2003-600286 20030620  
 US 2003-648945 20030826  
 AN 2004-142830 [14] WPIDS  
 CR 2004-784599  
 AB WO 2004001379 A2 UPAB: 20060121  
 NOVELTY - An assay method, comprising contacting the sample containing target polynucleotide with sensor peptide nucleic acid (PNA) and polycationic multichromophore in a solution under conditions in which sensor PNA can hybridize to target polynucleotide.  
 DETAILED DESCRIPTION - An assay method, comprising contacting the sample containing target polynucleotide with sensor peptide nucleic acid (PNA) and polycationic multichromophore in a solution under conditions in which sensor PNA can hybridize to target polynucleotide, if present, applying a light source to solution that can excite multichromophore, and detecting whether light is emitted from signaling chromophore of PNA, is new.  
 An assay method (M1), comprising:  
 (a) providing a sample that is suspected of containing a target polynucleotide;  
 (b) providing a polycationic multichromophore that electrostatically interacts with the target polynucleotide and upon excitation is capable of transferring energy to a signaling chromophore;  
 (c) providing a sensor peptide nucleic acid (PNA) (I) that is single-stranded and is complementary to the target polynucleotide, the sensor PNA conjugated to the signaling chromophore;  
 (d) contacting the sample with (I) and the multichromophore in a solution under conditions in which the sensor PNA can hybridize to the

target polynucleotide, if present;

(e) applying a light source to the solution that can excite the multichromophore; and

(f) detecting whether light is emitted from the signaling chromophore.

INDEPENDENT CLAIMS are also included for the following:

(1) a polynucleotide sensing solution comprising (I), a polycationic multichromophore (II) that can electrostatically interact with the phosphate backbone of the target polynucleotide and is capable of transferring energy to the signaling chromophore upon excitation when brought into proximity to it upon hybridization of the sensor PNA to the target polynucleotide; and

(2) a kit for assaying a sample for a target polynucleotide comprising (I) and (II).

USE - (M1) is useful for assaying target polynucleotide in a sample. The target polynucleotide is DNA or RNA. The sample comprises single, or double stranded target polynucleotide. The target polynucleotide is produced by an amplification reaction. (All claimed.) (M1) is useful for assaying target nucleic acid in sample such as blood, urine, milk, semen, sputum, mucus, buccal swab, vaginal swab, rectal swab, aspirate, needle biopsy, etc.

ADVANTAGE - (M1) allows analysis of target polynucleotide that occurs naturally in the sample or can be amplified prior to or in conjugation with analysis. By using multiple different sensor PNAs, multiple different polynucleotides can be independently detected and assayed.

DESCRIPTION OF DRAWINGS - The drawing shows assay method of target polynucleotide in a sample, employing a polycationic polymer as a light harvesting multichromophore.

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